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APPELLANTS' BRIEF AND APPENDICES

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

JAN 3 0 2006

Confirmation No.: 1392
Docket No.: DN1999111USA
Art Unit: 3683
Examiner: Xuan Lan T Nguyen

Serial No.: 10/009,696

Filed: November 6, 2001

BEFORE THE BOARD OF
PATENT APPEALS AND
INTERFERENCE

Mail Stop Appeal Brief-Patents United States Patent and Trademark Office P. O. Box 1450 Alexandria, Virginia 22313-1450

APPELLANTS' BRIEF

Dear Sir:

Appellants, by virtue of their Notice of Appeal filed September 8, 2005, hereby file their corrected Brief in response to the Final Rejection of all pending claims in the above-identified application and in response to the Notification of Non-Compliant Appeal Brief (37 CFR 41.37), dated January 20, 2006. Authorization to charge Appellants' Deposit Account No. 07-1725 in the amount of Five Hundred and 00/100 Dollars (\$500.00) to cover the fee for filing the Appeal Brief was authorized in Appellants' Appeal Brief filed on 09 November 2005.

Real Party in Interest

By virtue of an Assignment by the named inventors, the real party in interest is The Goodyear Tire & Rubber Company. The Assignment has not been recorded in the U.S. Patent and Trademark Office.

Related Appeals and Interferences

There are no related appeals or interferences.

Status of Claims

Claims 1-9, 12, 14, and 16-20 are pending in the application. Claims 1-9, 12, 14, and 16-20 stand rejected and are appealed. Claims 10, 13, and 15 are cancelled.

Status of Amendments

There are no outstanding amendments. No amendments have been filed subsequent to the last Office Action mailed on September 2, 2005.

Summary of the Invention

The present invention is directed to an airspring (10). The airspring (10) has at least three essential elements: a flexible cylindrical sleeve (14), and first and second opposing retainers (12, 26) (pg 2, lines 33-34). The sleeve is secured at each end to one of the pistons to form an internal air chamber (20) (pg 2, line 34-pg 3, line 2; pg 4, lines 23-24; Fig 1). The principal aspect of the present invention is the configuration of one of the retainers (26), this preferably being the retainer that secures the lower sleeve ends of the cylindrical sleeve (Figs 1, 2). The retainer (26) is a single piece, functioning as both a retainer and as a bumper (pg 4, lines 25-27). The retainer (26) has a central surface (52), also known as the bumper contact surface, that extends into the chamber (20) (pg 5, lines 9-12). The surface (52) may be flush with the remaining surface of the retainer or raised above the outer circumference of the retainer (pg 5, lines 10-12). To enable the retainer (26) to absorb and transmit forces during contact with the opposing retainer, the retainer (26) is provided with several concentric ribs (34, 40) and may be provided with radially extending ribs (48) (pg 4, line 27 – pg 5, line 8).

Grounds of Rejection to be Reviewed on Appeal

- I. Whether claim 12 is indefinite under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter of the invention.
- II. Whether claims 1-5, 7, 12, and 16-19 are anticipated under 35 U.S.C. § 102(b) by Ecktman et al_(US Patent 5,201,500).
- III. Whether claim 20 is obvious under 35 U.S.C. § 103(a) over Ecktman et al (US Patent 5,201,500).

Arguments

I. <u>Rejection of claim 12 as indefinite under 35 U.S.C. § 112 for failing to particularly point out and distinctly claim the subject matter.</u>

Claim 12 has been rejected as being indefinite for not using the specific word "said" before a previously identified element of the invention and for allegedly using the wrong verb tense. 35 U.S.C. § 112, second paragraph recites:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter

which the application regards as his invention.

The principal requirement under 35 U.S.C. § 112 is that the claims distinctly claim the subject matter. The claimed invention is clearly and distinctly pointed out and claimed. Claim 12 is dependent upon both claim 16 and claim 17. Claim 16 recites the airspring as having first and second retainer wherein one of the retainers has a surface that extends into the chamber. Because claim 16 recites more than one retainer, in claim 17 the retainer being modified via the claim language is identified as "the retainer that extends into the chamber" and recites that the retainer has support ribs. Claim 12, dependent on claim 17, further modifies the retainer, reciting "the retainer comprising support ribs" to assist in clarifying which retainer is being further modified. The phrase "comprising support ribs" is an identifying phrase.

One skilled in the art reading through the claims can understand that as the retainer is modified in each claim, language previously used for the modification is carried forward into the next dependent claim. The failure to use the word "said" does not inherently render the subject matter thereof as not distinctly claimed.

On the 112 rejection of the claim due to an asserted failure to use the wrong very tense, the rejection is incorrect. In the claim, it is the retainer being modified by the language "more than two concentrically disposed ribs." Since more than one retainer has been recited in claim 16, upon which claim 12 is dependent, the particular retainer is identified as "the retainer comprising support ribs." The phrase "comprising support ribs" is a dependent phrase identifying the noun "the retainer"; thus, per proper grammar, the verb tense should agree with the noun "retainer" not with the noun "ribs." The claim properly uses a single verb tense "has" not 'have' as set forth in the rejection.

Additionally, were the verb tense incorrect, Appellants do not believe an incorrect verb tense in a claim rises to the level-of a 112, first paragraph rejection, but instead is more properly subject to a claim objection.

As the lack of the word "said" fails to render the claim indefinite and the rejection of the claim based on an asserted wrong verb tense is incorrect, claim 12 does particularly point out and distinctly claim the subject matter which Applicant regard as the invention, it is requested that the rejection of the claim under 35 U.S.C. § 112, first paragraph be withdrawn.

II. Rejection under 35 U.S.C. § 102(b) by Ecktman et al (US Patent 5,201,500)?

IIA. Claims 1-5 and 7

The invention of claim 1 is an airspring with the following elements: a flexible cylindrical sleeve, two retainers, one at each opposing end of the sleeve to secure the sleeve

ends to form a chamber wherein one of the retainers has a centrally located bumper-contact surface "formed as part of the retainer". The bumper-contact surface portion of the retainer extends into the chamber formed by the sleeve and contacts the opposing retainer when the airspring is collapsed.

The claims have been held as anticipated under 35 U.S.C. § 102(b) by Ecktman et al. (US 5,201,500). 35 U.S.C. § 102(b) recites:

A person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Ecktman et al discloses an airspring comprising a flexible cylindrical sleeve and two retainers that secure the sleeve at opposing ends. The upper sleeve end is secured by crimping the upper retainer 2 around the sleeve end. The lower sleeve end is "clamped on base 4 of piston 3 by a clamping plate 12 in an air tight sealing relationship" (col 3, lines 32-34; Figures 2-4). The clamping plate 12 of Ecktman et al is a bowl shaped element with a central cap 34 (col 4, lines 9-15; Figures 2-4). The plate 12 is preferably metal as evidenced by the teaching that the cap is "secured to clamp plate 12 by brazing" (col 3, lines 15-16). According to the teachings of Ecktman et al, a separate snap-on bumper 20 "is mounted on base 4 of piston 3 and extends upwardly therefrom into chamber 15" for engagement with the opposing retainer 2 to assist in absorbing excessive shock forces (col 3, lines 56-62). This separate snap-on bumper satisfies the inventive goal of Ecktman et al by replacing the conventional heavy elastomeric bumper with a lighter weight, easier to install bumper.

Contrary to Appellants' claim that recites that a portion of the sleeve end securing retainer both enters into the chamber and contacts the opposing retainer when the airspring is collapsed, due to the bowl shape of the lower retainer plate 12 of Ecktman et al, no portion of the plate 12 of Ecktman et al enters into the air chamber (Figure 2), nor can any portion of the retainer plate 12 contact the opposing retainer 2 when the airspring is collapsed.

The courts have held that under 35 U.S.C. § 102 a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Herein, Ecktman et al does not disclose a retainer having a surface that enters the chamber or contacts the opposing retainer. Thus, Ecktman et al does not disclose each and every element and fails to anticipate the claimed invention.

In the rejection of the claim, it is asserted that a "retainer has many parts, the bumper-

contact surface is just one part of many" parts of the retainer and thus the outer surface of the snap-on bumper 20 of Ecktman et al is held to be Appellants' recited retainer bumper contact surface. Appellants respectfully disagree for several reasons. First, as disclosed and described by Ecktman et al, the retainer plate 12 has only one part: the lipped bowl shaped metal piece with a central opening. At a most generous interpretation, the retainer has, at most, two parts: the bowl shaped piece and the cap, as the cap is brazed onto the center of the bowl shaped piece. The bumper is a separately applied element that is secured to the cap and mounted onto the retainer – it is not part of the retainer. Second, by definition of the word "retainer," and as used in the airspring art, a retainer "retains," or secures, something. As used in the airspring art, those skilled in the art know that the purpose of a retainer is to secure the ends of the elastomeric sleeve of the airspring to assist in forming the internal gas chamber. The bumper of Ecktman et al in no way assists in securing the sleeve ends of Ecktman et al. The purpose of an airspring bumper to prevent the airspring from completely collapsing and to absorb forces when the airspring is compressed.

Claim 1 recites that the retainer has a bumper contact surface <u>formed as a part of the retainer</u> that contacts the other retainer when the airspring is collapsed. Thus, per the claim, the retainer and the bumper contact surface are <u>formed</u> together; i.e. cast, molded, formed, or made as a single piece. The airspring construction of Ecktman et al fails to have such a construction. There is nothing in Ecktman et al, in either text or drawings, that shows the lower retainer 12 of Ecktman et al having the bumper 20 <u>being formed as part of</u> the retainer 12. In fact, Ecktman et al teaches that cap 34 is secured "by brazing at 35" to retainer 12 (col 4, lines 11-16); thus indicating that the lower retainer 12 of Ecktman et al is metal as brazing is only performed to bond metal items to metal items while the bumper 20 of Ecktman et al is formed of a high strength polyester elastomer or plastic (col 4, line 60+). There is nothing in Ecktman et al which suggests forming the retainer plate 12 from a high strength polyester elastomer or plastic, and forming the bumper from metal would be contrary to the explicit teachings of Ecktman et al to form a lighter weight bumper (col 5, line 9-18).

In response to Appellants' arguments it is held that the claim language does not exclude the bumper of Ecktman et al to be part of the retainer. Appellants own teachings and invention are being used in hindsight when it is asserted that the separate elements of Ecktman et al can be considered a single element because the claims do not "exclude" such a construction. Appellants have determined that the lower retainer can be constructed and formed in such a manner that the inventive retainer has two functions: to retain the sleeve edges and to act as a bumper during airspring compression; replacing two conventional separately formed elements

- thereby simplifying construction of an airspring. Ecktman et al teaches that these functions are performed by two separate elements, and fails to teach or appreciate a single element performing both functions.

As Ecktman et al fails to disclose each and every claim element of claims 1-5 and 7 as required under 35 U.S.C. 102(b), it is respectfully requested that the rejection of the claims over Ecktman et al be withdrawn.

IIB. Claims 12 and 16-19

Claim 16 recites an airspring having the following elements: a flexible cylindrical sleeve, two retainers, one at each opposing end of the sleeve to secure the sleeve ends to form a chamber wherein the retainer has a centrally located axially outer surface that extends into the chamber formed by the sleeve and contacts the opposing retainer when the airspring is collapsed.

The claims have been held as anticipated under 35 U.S.C. § 102(b) by Ecktman et al (US 5,201,500). 35 U.S.C. § 102(b) recites:

A person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.

Ecktman et al discloses an airspring comprising a flexible cylindrical sleeve and two retainers that secure the sleeve at opposing ends. The upper sleeve end is secured by crimping the upper retainer 2 around the sleeve end. The lower sleeve end is "clamped on base 4 of piston 3 by a clamping plate 12 in an air tight sealing relationship" (col 3, lines 32-34; Figures 2-4). The clamping plate 12 of Ecktman et al is a bowl shaped element with a central cap 34 (col 4, lines 9-15; Figures 2-4). The plate 12 is preferably metal as evidenced by the teaching that the cap is "secured to clamp plate 12 by brazing" (col 3, lines 15-16). According to the teachings of Ecktman et al, a separate snap-on bumper 20 "is mounted on base 4 of piston 3 and extends upwardly therefrom into chamber 15" for engagement with the opposing retainer 2 to assist in absorbing excessive shock forces (col 3, lines 56-62). This separate snap-on bumper satisfies the inventive goal of Ecktman et al by replacing the conventional heavy elastomeric bumper with a lighter weight, easier to install bumper.

Contrary to Appellants' claims that recite that a portion of the sleeve end securing retainer both enters into the chamber and contacts the opposing retainer when the airspring is

collapsed, due to the bowl shape of the lower retainer plate 12 of Ecktman et al, no portion of the plate 12 of Ecktman et al enters into the air chamber (Figure 2), nor can any portion of the retainer plate 12 contact the opposing retainer 2 when the airspring is collapsed.

The courts have held that under 35 U.S.C. § 102 a "claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Herein, Ecktman et al does not disclose a retainer having a surface that enters the chamber or contacts the opposing retainer. Thus, Ecktman et al does not disclose each and every element and fails to anticipate the claimed invention.

In the rejection of the claim, it is asserted that a "retainer has many parts, the bumper-contact surface is just one part of many" parts of the retainer and thus the outer surface of the snap-on bumper 20 of Ecktman et al is held to be Appellants' recited retainer bumper contact surface. Appellants respectfully disagree for several reasons. First, as disclosed and described by Ecktman et al, the retainer plate 12 has only one part: the lipped bowl shaped metal piece with a central opening. At a most generous interpretation, the retainer has, at most, two parts: the bowl shaped piece and the cap, as the cap is brazed onto the center of the bowl shaped piece. The bumper is a separately applied element that is secured to the cap and mounted onto the retainer – it is not part of the retainer. Second, by definition of the word "retainer," and as used in the airspring art, a retainer "retains," or secures, something. As used in the airspring art, those skilled in the art know that the purpose of a retainer is to secure the ends of the elastomeric sleeve of the airspring to assist in forming the internal gas chamber. The bumper of Ecktman et al in no way assists in securing the sleeve ends of Ecktman et al. The purpose of an airspring bumper to prevent the airspring from completely collapsing and to absorb forces when the airspring is compressed.

In the rejection of claim 16, the plate 12 and bumper 20 of Ecktman et al are simply referred to as the "second retainer;" and it is asserted that the bumper 20 is simply a part of plate 12. However, referring to these separately formed and mechanically joined elements as a single element does not make them so. Ecktman et al does not teach having a retainer with a centrally located axially outer surface that can contact the opposing retainer. The central portion of the retainer 12 of Ecktman et al is actually radially inward of the edges of the retainer and cannot contact the opposing retainer as recited.

In response to Appellants' arguments it is held that the claim language does not exclude the bumper of Ecktman et al to be part of the retainer. Appellants own teachings and invention are being used in hindsight when it is asserted that the separate elements of Ecktman et al can be considered a single element because the claims do not "exclude" such a construction.

Appellants have determined that the lower retainer can be constructed and formed in such a manner that the inventive retainer has two functions: to retain the sleeve edges and to act as a bumper during airspring compression; replacing two conventional separately formed elements—thereby simplifying construction of an airspring. Ecktman et al teaches that these functions are performed by two separate elements, and fails to teach or appreciate a single element performing both functions.

As Ecktman et al fails to disclose each and every claim element of claims 12 and 16-19 as required under 35 U.S.C. 102(b), it is respectfully requested that the rejection of the claims over Ecktman et al be withdrawn.

III. Rejection of claim 20 as obvious under 35 U.S.C. § 103(a) by Ecktman et al (US Patent 5,201,500)?

Claim 20 recites that the airspring has no separately formed and applied bumper on either retainer.

In the rejection it is held that it would have been obvious to form the separate bumper and retainer as a single piece as it has been held that forming one piece from that which was formerly two pieces involves only routine skill in the art, citing *Howard v. Detroit Stove Works*, 150 U.S. 164 (1893).

Claim 20 is dependent upon claim 16 which stands rejected under 35 U.S.C. § 102(b) on the rejection that a "retainer has many parts, the bumper-contact surface is just one part of many" parts of the retainer and thus the outer surface of the snap-on bumper 20 of Ecktman et al. To then recognize that the bumper and the retainer of Ecktman et al are two separate elements as done in the present 103 rejection appears contradictory to the 102 rejection of claim 16.

Regarding the assertion that it would have been obvious to form the two pieces as a single piece, Appellants disagree. As previously noted by Appellants, Ecktman et al teaches the plate 12 is formed of metal as evidenced by the teaching that ca central cap 34 is brazed to the plate 12 (col 3, lines 15-16), while the bumper 20 is formed of a high strength polyester elastomer or plastic (col 4, line 60+). In *Howard v. Detroit Stove Works*, the two known elements being combined into a single element were both cast pieces – the elements were formed of the same material, making integration into a single piece an obvious act requiring no novelty or invention. However, the court has not applied this rule in all cases where previously separate elements are combined. In *Krementz v. S. Cottle Co.*, 148 U.S. 556 (1893), the court held a collar button with a one piece head and stem patentable over a multipiece

collar button, citing improvements in the new article over the prior article.

Herein, Appellants did not simply combine two elements formed of the same material to achieve a unitary element. Appellants took two elements conventionally formed of different materials and determined how the structure could be formed of a single material and how the structure had to be modified in order to absorb forces and function similar to the conventional separate elements of separate materials.

More than just routine skill of combining two similar elements was employed in the present invention. Thus, the claimed invention is not obvious over Ecktman et al.

It is requested that this rejection be reconsidered and withdrawn.

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CLAIMS APPENDIX

CLAIMS

1. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and at the opposing end to other retainer (26 or 12), the improvement being characterized by:

one of the retainers (26) having a bumper-contact surface (52) within the sleeve (14) for axial movement into the sleeve (14), the bumper-contact surface formed as a part of the retainer and which contacts the other retainer (12) when the airspring is collapsed, and absorbs and transmits forces generated from such contact, the bumper contact surface (52) being centrally located on the surface of the retainer (26) which extends into the sleeve (14) during axial movement into the sleeve (14).

- 2. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is comprised of support ribs (34, 40, 42, 44, 48).
- 3. An airspring (10) in accordance with claim 2 wherein the support ribs are substantially radially extending (42, 48).
- 4. An airspring (10) in accordance with claim 2 wherein the support ribs are a series of concentrically disposed ribs (34, 40, 44).
- 5. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is defined by a first axially outer surface (52) which extends into the airspring sleeve (14) and a second axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces being the bumper-contact surface (52) and the axial difference between the two surfaces being greater than zero to separate the two surfaces by a dimension (b).
- 6. An airspring (10) in accordance with claim 5 wherein the retainer (26) having the bumper-contact surface (52) has an axial height (H) as measured from the axially outer most surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).

- 7. An airspring (10) in accordance with claim 1 wherein the airspring (10) further comprises a piston (28) and the flexible sleeve (14) is comprised of a bead ring (24) at one end, the bead ring (24) being secured between the retainer (26) having the bumper-contact surface (52) and the piston (28).
- 8. An airspring (10) in accordance with claim 1 wherein the retainer (26) having the bumper-contact surface (52) is formed from a thermoplastic material having a tensile strength in the range of 1965 to 3165 kg/cm² (28,000 to 45,000 psi), and a flex strength in the range of 2810 to 4220 kg/cm² (40,000 to 60,000 psi).
- 9. An airspring (10) in accordance with claim 8 wherein the retainer (26) is formed from a material selected from the following group: fiberglass reinforced nylon, long fiber reinforced thermoplastic, and short fiber reinforced thermoplastic.
- 10. (canceled)
- 11. (canceled)
- 12. An airspring (10) in accordance with claim 17 wherein the retainer comprising support ribs has more than two concentrically disposed ribs.
- 13. (canceled)
- 14. An airspring (10) in accordance with claim 18 wherein the retainer (26) that extends into the chamber (20) has an axial height (H) as measured from the axially outermost surface (52) to the axially innermost surface, and the surface-separation dimension (b) is 20 to 80% of the retainer height (H).
- 15. (canceled)
- 16. An airspring (10) comprising a flexible cylindrical sleeve (14) secured at opposing ends, a chamber (20) created by the secured sleeve (14), a piston (28), and first and second retainers (12, 26), the sleeve being secured at a first end to one of the retainers (12 or 26), and an opposing end of the sleeve (14) being secured between the

piston (28) and the other retainer (26 or 12), wherein:

one of the retainers (26) has a centrally located axially outer surface (52), the axially outer surface (52) extends into the chamber (20) during axial movement, wherein the axially outer surface (52) of the retainer (26) contacts the other retainer (12) when the airspring is collapsed.

- 17. An airspring in accordance with claim 16 wherein the retainer that extends into the chamber (20) has support ribs (34, 40, 42, 44, 48).
- 18. An airspring in accordance with claim 16 wherein the retainer (26) that extends into the chamber (20) has a separate axially outer surface (50) which extends into the airspring sleeve (14), the axially outermost of the two surfaces (50, 52) being the surface which contacts the other retainer (12) when the airspring is collapsed, and the axial difference between the two outer surfaces (50, 52) being greater than zero to separate the two surfaces by a dimension (b).
- 19. An airspring in accordance with claim 16 wherein the axially outer surface (52) of the retainer is radially inward, relative to a radial center of the airspring, of the secured ends of the elastomeric sleeve (14) secured by the retainer having the axially outer surface that contacts the other retainer.
- 20. An airspring in accordance with claim 16 wherein the airspring has no separately formed and applied bumper on either retainer.

EVIDENCE APPENDIX

No evidence has been submitted in the present application pursuant to 37 CFR 1.130, 1.131, or 1.132. Nor is there any additional evidence relied upon by Appellantsin the appeal.

RELATED PROCEEDINGS APPENDIX

There are no related proceedings or decisions related to the present case.